

RECEIVED
CENTRAL FAX CENTER

OCT 31 2007

Docket No. 740756-1961

Serial No. 09/295,607

Page 2

IN THE CLAIMS:

1.-7. (Canceled)

8. (Currently Amended) A semiconductor device comprising:

a substrate having a front surface and a rear surface;

a first insulating film comprising silicon oxide provided over said front surface of said substrate;[[an]] a second insulating film comprising aluminum nitride and carbon provided over said first insulating film said front surface of the substrate;a third insulating film comprising oxide provided over said second insulating film;a transistor provided over said third insulating film, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween,wherein aluminum to nitrogen ratio in said ~~aluminum nitride~~ second insulating film is in the range of 0.9 to 1.4.

9.-16. (Canceled)

17. (Previously Presented) The device of claim 8 wherein said substrate is a glass substrate.

18.-21. (Canceled)

22. (Currently Amended) A semiconductor device comprising:

a substrate having a front surface and a rear surface;

a first insulating film comprising silicon oxide provided over said front surface of said substrate;a second insulating film provided over said first insulating film;a third insulating film comprising oxide provided over said second insulating film;

Docket No. 740756-1961

Serial No. 09/295,607

Page 3

an aluminum nitride insulating film containing therein oxygen provided under said rear surface of ~~[[the]]~~ said substrate; and

a transistor provided over said third insulating film ~~front surface of the substrate~~, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween;

wherein aluminum to nitrogen ratio in said aluminum nitride insulating film is in the range of 0.9 to 1.4.

23. (Currently Amended) A semiconductor device comprising:

a substrate having a front surface and a rear surface;

a first insulating film comprising silicon oxide provided over said front surface of said substrate;

a second insulating film provided over said first insulating film;

a third insulating film comprising oxide provided over said second insulating film;

an aluminum nitride insulating film containing therein carbon provided under said rear surface of ~~[[the]]~~ said substrate; and

a transistor provided over said third insulating film ~~front surface of the substrate~~, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween,

wherein aluminum to nitrogen ratio in said aluminum nitride insulating film is in the range of 0.9 to 1.4.

24. (Currently Amended) A semiconductor device comprising:

a substrate having a front surface and a rear surface;

a first insulating film comprising silicon oxide provided over said front surface of said substrate;

a second insulating film comprising ~~[[an]] aluminum nitride insulating film containing therein~~ and carbon provided over said first insulating film ~~said front surface of the substrate;~~

a third insulating film comprising oxide provided over said second insulating film;

and

Docket No. 740756-1961

Serial No. 09/295,607

Page 4

a transistor provided over ~~said third insulating film~~ ~~said aluminum nitride insulating film~~, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween,

wherein aluminum to nitrogen ratio in said ~~aluminum nitride~~ second insulating film is in the range of 0.9 to 1.4.

25-27. (Canceled)

28. (Previously Presented) The device of claim 22 wherein said substrate is a glass substrate.

29. (Previously Presented) The device of claim 23 wherein said substrate is a glass substrate.

30. (Previously Presented) The device of claim 24 wherein said substrate is a glass substrate.

31-34. (Canceled)

35. (Previously Presented) The device of claim 8 wherein said insulating film has a thickness of 100 Å to 5000 Å.

36-39. (Canceled)

40. (Previously Presented) The device of claim 22 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

41. (Previously Presented) The device of claim 23 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

Docket No. 740756-1961
Serial No. 09/295,607
Page 5

42. (Previously Presented) The device of claim 24 wherein said aluminum nitride insulating film has a thickness of 100 Å to 5000 Å.

43-46. (Canceled)

47. (Previously Presented) The device of claim 8 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

48-50. (Canceled)

51. (Previously Presented) The device of claim 22 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

52. (Previously Presented) The device of claim 23 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

53. (Previously Presented) The device of claim 24 wherein said channel formation region is crystallized by laser irradiation through a layer comprising at least one of silicon oxide and silicon nitride on said channel formation region.

54. (Currently Amended) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
a first insulating film comprising silicon oxide provided over said front surface of said substrate;
a second insulating film provided over said first insulating film;
a third insulating film comprising oxide provided over said second insulating film;
an aluminum nitride insulating film containing therein oxygen provided under said rear surface of [the] said substrate; and

Docket No. 740756-1961

Serial No. 09/295,607

Page 6

a transistor provided over said third insulating film ~~said front surface of the substrate~~,
said transistor having at least a channel formation region comprising crystalline silicon, a gate
insulating film adjacent to said channel formation region, and a gate electrode adjacent to
said channel formation region with said gate insulating film interposed therebetween;

an interlayer insulating film having a leveled upper surface over said transistor; and
a pixel electrode over said interlayer insulating film,

wherein aluminum to nitrogen ratio in said aluminum nitride insulating film is in the
range of 0.9 to 1.4.

55. (Previously Presented) The device of claim 54 wherein said channel
formation region is crystallized by laser irradiation through a layer comprising silicon oxide
on said channel formation region.

56. (Previously Presented) The device of claim 54 wherein said substrate is a
glass substrate.

57-59. (Canceled)

60. (Currently Amended) A semiconductor device comprising:

a substrate having a front surface and a rear surface;

a first insulating film comprising silicon oxide provided over said front surface of said
substrate;

a second insulating film comprising [[an]] aluminum nitride insulating film containing
therein and oxygen provided over said first insulating film ~~said front surface of the substrate;~~

a third insulating film comprising oxide provided over said second insulating film;

a transistor provided over said third insulating film, said transistor having at least a
channel formation region, a gate insulating film adjacent to said channel formation region,
and a gate electrode adjacent to said channel formation region with said gate insulating film
interposed therebetween;

an interlayer insulating film comprising a leveled upper surface over said transistor;
and

a pixel electrode over said interlayer insulating film,

Docket No. 740756-1961
Serial No. 09/295,607
Page 7

wherein aluminum to nitrogen ratio in said ~~aluminum nitride~~ second insulating film is in the range of 0.9 to 1.4.

61. (Currently Amended) A semiconductor device comprising:
a substrate comprising a front surface and a rear surface;
a first insulating film comprising silicon oxide provided over said front surface of said substrate;
a second insulating film comprising [[an]] aluminum nitride insulating film containing therein and oxygen provided over said first insulating film said front surface of the substrate;
a third insulating film comprising oxide provided over said second insulating film;
a transistor provided over said third insulating film, said transistor having at least a channel formation region, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween;
an insulating film over said transistor; and
a pixel electrode over said insulating film,
wherein aluminum to nitrogen ratio in said ~~aluminum nitride~~ second insulating film is in the range of 0.9 to 1.4.

62. (Previously Presented) The device of claim 60 wherein said substrate is a glass substrate.

63. (Previously Presented) The device of claim 61 wherein said substrate is a glass substrate.

64. (Previously Presented) The device of claim 60 wherein said insulating film has a thermal conductivity of 0.6 W/cm K or higher.

65. (Previously Presented) The device of claim 61 wherein said insulating film has a thermal conductivity of 0.6 W/cm K or higher.

66.-67. (Canceled)

Docket No. 740756-1961

Serial No. 09/295,607

Page 8

68. (New) A semiconductor device comprising:
a substrate;
a first insulating film comprising silicon oxide;
a second insulating film comprising aluminum nitride formed on said first insulating film;
a third insulating film comprising silicon oxide formed on said second insulating film;
a semiconductor film formed on said third insulating film;
a gate insulating film formed on said semiconductor film; and
a gate electrode formed on said gate insulating film.

69. (New) The semiconductor device according to claim 68, wherein said semiconductor device is an active matrix display device.

70. (New) The semiconductor device according to claim 68, wherein said semiconductor device comprises a pixel portion and a driver portion over said substrate.

71. (New) A semiconductor device comprising:
a substrate;
a first insulating film comprising silicon oxide;
a second insulating film comprising silicon nitride formed on said first insulating film;
a third insulating film comprising silicon oxide formed on said second insulating film;
a semiconductor film formed on said third insulating film;
a gate insulating film formed on said semiconductor film; and
a gate electrode formed on said gate insulating film.

72. (New) The semiconductor device according to claim 71, wherein said semiconductor device is an active matrix display device.

73. (New) The semiconductor device according to claim 71, wherein said semiconductor device comprises a pixel portion and a driver portion over said substrate.

Docket No. 740756-1961

Serial No. 09/295,607

Page 9

74. (New) A semiconductor device comprising:
a substrate;
a first insulating film comprising silicon oxide;
a second insulating film comprising aluminum oxide formed on said first insulating film;
a third insulating film comprising silicon oxide formed on said second insulating film;
a semiconductor film formed on said third insulating film;
a gate insulating film formed on said semiconductor film; and
a gate electrode formed on said gate insulating film.

75. (New) The semiconductor device according to claim 74, wherein said semiconductor device is an active matrix display device.

76. (New) The semiconductor device according to claim 74, wherein said semiconductor device comprises a pixel portion and a driver portion over said substrate.

77. (New) A semiconductor device comprising:
a substrate;
a first insulating film comprising silicon oxide;
a second insulating film comprising aluminum nitride formed on said first insulating film;
a third insulating film comprising oxide formed on said second insulating film;
a semiconductor film formed on said third insulating film;
a gate insulating film formed on said semiconductor film; and
a gate electrode formed on said gate insulating film.

78. (New) The semiconductor device according to claim 77, wherein said semiconductor device is an active matrix display device.

79. (New) The semiconductor device according to claim 77, wherein said semiconductor device comprises a pixel portion and a driver portion over said substrate.

Docket No. 740756-1961

Serial No. 09/295,607

Page 10

80. (New) A semiconductor device comprising:
a substrate;
a first insulating film comprising silicon oxide;
a second insulating film comprising silicon nitride formed on said first insulating film;
a third insulating film comprising oxide formed on said second insulating film;
a semiconductor film formed on said third insulating film;
a gate insulating film formed on said semiconductor film; and
a gate electrode formed on said gate insulating film.

81. (New) The semiconductor device according to claim 80, wherein said semiconductor device is an active matrix display device.

82. (New) The semiconductor device according to claim 80, wherein said semiconductor device comprises a pixel portion and a driver portion over said substrate.

83. (New) A semiconductor device comprising:
a substrate;
a first insulating film comprising silicon oxide;
a second insulating film comprising aluminum oxide formed on said first insulating film;
a third insulating film comprising oxide formed on said second insulating film;
a semiconductor film formed on said third insulating film;
a gate insulating film formed on said semiconductor film; and
a gate electrode formed on said gate insulating film.

84. (New) The semiconductor device according to claim 83, wherein said semiconductor device is an active matrix display device.

85. (New) The semiconductor device according to claim 83, wherein said semiconductor device comprises a pixel portion and a driver portion over the substrate.